

**CLAIMS**

1. A communication device comprising a physical layer (L1) and two or more higher layers (L2/L3), said physical layer comprising means to acquire  
5 a data modulated waveform signal (3), comprising at least one data block and an indicator of the format of said data block, means to process said block and indicator, in order to be able to map the received block onto a number of transport channels (24,25) in the higher layers,  
10 characterized in that said physical layer (L1) comprises:
- a shared memory block (30), wherein lookup tables (35,38) for transport formats (40) and transport format indicators (37) can be saved, allowing the physical layer (L1) to identify transport formats for  
15 one or more transport channels,
  - a connection (32) between the physical layer (L1) and the higher layers which allows said lookup tables to be loaded into said shared memory block (30) from the higher layers,
  - 20 - a finite state machine (31), capable of acquiring the transport format from the shared memory block (30).
2. The device of claim 1, wherein said higher layers consist of a data link layer (L2) and a network layer (L3).
- 25 3. The device of claim 1 or 2, wherein said physical layer (L1) is implemented in hardware.
4. The device of claim 3, wherein said physical layer (L1) comprises an inner modem (1) and an outer modem (2), and wherein said shared memory block  
30 (30) and said finite state machine are part of said outer modem (2).

5. The device of claim 1, realized as or as part of an integrated circuit.

6. A method of processing a data modulated waveform signal (3), comprising the steps of

- 5 - Receiving by a receiving device, a data modulated waveform signal (3), comprising at least one data block and at least one indicator of the format of said data block, said receiving device comprising a physical layer (L1), and a number of higher layers  
10 (L2/L3),
  - transferring said data block over a physical data channel (20), while transferring said indicator over a physical control channel (21),
  - decoding and demultiplexing said data block, in order  
15 to map said data block onto at least one transport channel (24,25),
  - decoding said indicator of the format of said data block, resulting into one code (36) for the format of said data block,
- 20 - looking up in a first table (35), an indicator (37) to the format for each transport channel which corresponds to the code (36) for the format of said data block, said first table being present in a shared memory block (30), which is implemented in said  
25 physical layer (L1),
  - looking up in a second table (38), all transport formats (40), which correspond to said indicator (37) to the format for each transport channel, said second table being present in said shared memory block (30),  
30 which is implemented in said physical layer (L1),

- mapping said data block onto said at least one transfer channel (24,25), in the correct transport format.

7. The method of claim 6, in which said  
5 data modulated waveform is used for one of the following applications: IMT-2000, 3GPP, 3GPP2, W-CDMA, UMTS/FDD, UMTS/TDD, 1xEV-DO, 1xEV-DV, CDMA2000, IS95, IS95A, IS95B, UWB, TD-SCDMA, LAS-CDMA, IEEE802.11, IEEE802.11A, IEEE802.11B, IEEE802.16.

10